

**13. Courses of Study and Scheme of Assessment  
ME MANUFACTURING ENGINEERING**

(2015 REGULATIONS)  
(Minimum No. of credits to be earned: 75\*)

Course Code	Course Title	Hours/Week			Credits	Maximum Marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
<b>I SEMESTER</b>									
15PP01	Statistics, Quality Control and Reliability Engineering	2	2	0	3	50	50	100	PC
15PP02	Advanced Manufacturing Processes	3	0	0	3	50	50	100	FC
15PP03	Materials Selection and Metallurgy	3	0	0	3	50	50	100	FC
15PP04	Geometric Modeling for Manufacturing	3	2	0	4	50	50	100	PC
15PP05	Design for Manufacture and Assembly	3	2	0	4	50	50	100	PC
15PP55	Object Computing and Data Structures Laboratory	0	0	4	2	100	-	100	PC
15PP61	Industry Visit & Technical Seminar	0	0	2	1	100	-	100	EEC
<b>Total 26 Hrs</b>		<b>14</b>	<b>6</b>	<b>6</b>	<b>20</b>	<b>450</b>	<b>250</b>	<b>700</b>	
<b>II SEMESTER</b>									
15PP06	Engineering Economics	3	0	0	3	50	50	100	PC
15PP07	Finite Element Applications in Manufacturing	3	2	0	4	50	50	100	PC
15PP08	Advanced Metrology	3	0	0	3	50	50	100	PC
15PP09	Automation in Manufacturing	2	2	0	3	50	50	100	PC
15PP10	Computer Numerical Control	3	2	0	4	50	50	100	PC
15PP__	Professional Elective - 1	3	0	0	3	50	50	100	PE
15PP51	Advanced Manufacturing Laboratory	0	0	2	1	100	-	100	PC
<b>Total 25 Hrs</b>		<b>17</b>	<b>6</b>	<b>2</b>	<b>21</b>	<b>400</b>	<b>300</b>	<b>700</b>	
<b>III SEMESTER</b>									
15PP__	Professional Elective - 2	3	0	0	3	50	50	100	PE
15PP__	Professional Elective - 3	3	0	0	3	50	50	100	PE
15PP__	Professional Elective - 4	3	0	0	3	50	50	100	PE
15PP__	Professional Elective - 5	3	0	0	3	50	50	100	PE
15PP__	Professional Elective - 6	3	0	0	3	50	50	100	PE
15PP52	Automation, Metrology and Simulation Laboratory	0	0	4	2	100	-	100	PC
15PP71	Project Work I	0	0	6	3	100	-	100	EEC
<b>Total 25 Hrs</b>		<b>15</b>	<b>0</b>	<b>10</b>	<b>20</b>	<b>450</b>	<b>250</b>	<b>700</b>	
<b>IV SEMESTER</b>									
15PP72	Project Work II	0	0	28	14	50	50	100	EEC
<b>Total 28 Hrs</b>		<b>0</b>	<b>0</b>	<b>28</b>	<b>14</b>	<b>50</b>	<b>50</b>	<b>100</b>	
<b>PROFESSIONAL ELECTIVE THEORY COURSES (Six to be opted)</b>									
15PP21	Production and Operations Management	3	0	0	3	50	50	100	PE
15PP22	Industrial Robotics	3	0	0	3	50	50	100	PE
15PP23	Tool Design	3	0	0	3	50	50	100	PE
15PP24	Rapid Prototyping	3	0	0	3	50	50	100	PE
15PP25	Applied Pneumatics and Hydraulics	3	0	0	3	50	50	100	PE
15PP26	Optimization Techniques	3	0	0	3	50	50	100	PE
15PP27	Non-Traditional Machining Processes	3	0	0	3	50	50	100	PE
15PP28	Product Development Strategies	3	0	0	3	50	50	100	PE
15PP29	Image Processing and Machine Vision	3	0	0	3	50	50	100	PE
15PP30	Mechatronics System	3	0	0	3	50	50	100	PE
15PP31	Solidification Processing and Foundry Metallurgy	3	0	0	3	50	50	100	PE
15PP32	Reliability Engineering	3	0	0	3	50	50	100	PE
15PP33	Logistics and Supply Chain Management	3	0	0	3	50	50	100	PE
15PP34	Total Quality Management	3	0	0	3	50	50	100	PE
15PP35	Work Systems Engineering	3	0	0	3	50	50	100	PE
15PP36	Six-Sigma	3	0	0	3	50	50	100	PE
15PP37	Lean Manufacturing	3	0	0	3	50	50	100	PE
15PP38	Agile Manufacturing	3	0	0	3	50	50	100	PE
15PP39	Combinatorial Optimization	3	0	0	3	50	50	100	PE
15PP40	Mechanics of Polymer Matrix Composites	3	0	0	3	50	50	100	PE

\* Indicated is the minimum number of credits to be earned by a student.

**CAT – Category; FC – Foundation Course; PC – Professional Core; PE – Professional Elective; EEC – Employability Enhancement Course**

### **ONE CREDIT COURSES**

15PK01	Process Improvement and Product Design through Lean Six Sigma
15PK02	Design and Optimization Technology
15PK03	Supply Chain Management
15PK04	Introduction to Precision Machining
15PK05	Theory of Constraints and its Thinking Process
15PK06	Press Tool Design
15PK07	Injection Mold Design
15PK08	Advanced Metrology and Calibration

### **SCIENCE ELECTIVES**

15ID01	Micro Electro Mechanical Systems (MEMS)
15ID02	Sensors for Engineering Applications
15ID03	Laser Processing of Materials
15ID04	Plasma Technology
15ID05	Nanosensor and its Applications
15ID06	Nano Magnetism and Spintronics
15ID07	Corrosion Science and Engineering
15ID08	Instrumental Methods of Chemical Analysis
15ID09	Polymer Science and Technology
15ID10	Nanomaterials and Nanotechnology
15ID11	Thin Film Technology

### **HUMANITIES AND LANGUAGES ONE CREDIT COURSES**

15OK01	Research Writing in Engineering Sciences
15OK02	Indian Ethos and Human Values
15OK03	Personality Development
15OK04	Financial Accounting and Cost Accounting